1985

71-Prehistoric Plant Residues from the Big Woods (21C4-34) and Lightfoot (21C4-35) Sites, the Northfield, Burning Star Mine # 4, Perry County, Illinois

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REPORT OF INVESTIGATIONS NO. 71

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PREHISTORIC PLANT RESIDUES FROM THE BIG WOODS (21C4-34) AND LIGHTFOOT (21C4-35) SITES, THE NORTHFIELD, BURNING STAR MINE # 4, PERRY COUNTY, ILLINOIS

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The Northfield research area of Consolidation Coal Company's Burning Star Mine # 4 occupies the Upper Galum Creek drainage of Perry County, Illinois. This stream, a tributary of the Big Muddy River, together with its principal tributaries, Bonnie and Rock Fork creeks, drains an area of mature topography featuring the low relief, gently rolling hills, and broad alluvial valleys typical of the Mt. Vernon Hill Country of the Southern Till Plains Division. Although, floristically speaking, the study area lies within the Oak-Hickory Forest Region of the Western Mesophytic Forest (Braun 1950), the local vegetative pattern can more properly be described as comprising a mosaic of plant communities in which the prairie-forest ecotone is dominant.

The two prehistoric sites under consideration, Big Woods (21C4-34) and Lightfoot (21C4-35), occupy ridge spurs on the opposite sides of a small unnamed stream entering the Galum Creek Valley from the southwest just a short distance below the confluence of Bonnie, Rock Fork, and Galum creeks. Situated at an elevation of 135 m (450 ft) ASL, both sites occur in the slope woodland forest zone, the richest biogeographical zone in the research area, and are immediately adjacent to the bottomland forest zone flanking Galum Creek to the west. Moreover, areas of prairie vegetation, upland forest and/or post oak timber occur within 300-450 m of the sites.

Investigated by personnel of American Resources Group, Ltd. of Carbondale, Illinois in the summer of 1983, the Big Woods and Lightfoot sites were observed to be multicomponent in nature. However, the plant residues submitted to this analyst were, with the singular exception

of the flotation sample extracted from Feature 45 on the Lightfoot site, recovered from features identified as being Late Woodland in origin. Feature 45 represents the only Middle Woodland Crab Orchard pit found on any site excavated in the Northfield (Mr. Mark Wagner, ARG, Ltd., personal communication).

Inasmuch as ARG personnel anticipated considerable redundancy with respect to the botanical component from features on these two sites and plant residues from flotation samples dating to the Late Woodland Period from sites previously analyzed (Cremin 1983; 1985), the quantity of material submitted on this occasion is very small. In aggregate, six samples (comprising 11 containers) from Big Woods and five samples (six vials) from Lightfoot, derived from a series of five relatively shallow flat bottomed and basin-shaped features on the former and two deep flared base Late Woodland pits and a shallow Crab Orchard basin on the latter, comprise the assemblage available for study.

For purposes of analysis and comparison with plant residues from previously excavated assemblages it is noteworthy that these data have been extracted from feature context using the same recovery methods. Pit features were cross-sectioned and a 10 l column sample of fill collected for processing by the tub agitation method. Light and heavy fractions were separated in the field and removed to the ARG laboratory for initial sorting and quantification by gross categories such as wood charcoal, nutshell, seeds, etc. Subsequently, the packaged plant material, together with the analytic sample sheet prepared for each feature, was submitted to this analyst.

Carbonized plant remains retrieved from 120 liters of floated

feature fill aggregate a mere 12.08 g for these two sites and have been placed into the following categories during analysis: identified wood charcoal - 0.76 g; nutshell and kernel fragments - 10.67 g; and seeds - 0.65 g.

The single specimen of wood charcoal included in the sample submitted for analysis has been identified by my associate, Mr. David De Fant, as American Beech (Fagus grandifolia). The nutshell, comprising 88.3% of all plant residues by weight, consists of several common hickory species and a representative of the genus Juglans (black walnut or butternut). The latter, represented by a single specimen in the Crab Orchard sample (Feature 45) from Lightfoot, two small fragments from a Late Woodland feature on this same site, and one piece from a Late Woodland pit on Big Woods, given the local environmental context, is most probably black walnut. Be that as it may, Juglans constitutes merely a trace element (5.0%) in the nutshell spectrum.

Carya is represented by at least three species (C. cordiformis, C. ovata, and C. tomentosa), all of which can be anticipated to have occurred in the immediate vicinity of the two sites. Bitternut is the most common hickory throughout much of southern Illinois, occurring in both moist and dry woods. Shagbark and mockernut hickories frequent the slope woodland forest zone. That hickory nutshell was observed in all but one of the 11 flotation samples and is consistently the most abundant nut in terms of both weight and count, argue for its importance in the diet of the prehistoric inhabitants of these sites.

Finally, seeds aggregate 0.65 g by weight and occur in four samples from three features on the Big Woods site. Fleshy fruits are represented by the occurrences of two grape seeds and a single seed of the paw paw

in Feature 27. A single seed of Polygonum or knotweed has been identified in each of two floats from Feature 28, and Chenopodium or goosefoot is represented by a fragmentary specimen in the sample from Feature 36. Given the frequency with which these seeds occur in the samples it is impossible to rule out accidental inclusion during the prehistoric occupation. This is especially the case with respect to the small seeds of knotweed and goosefoot. These disturbed habitat species could have been growing on the site during the time of occupation, with natural seed rain being responsible for these specimens finding their way into feature context where they were preserved due to incomplete combustion. Alternatively, these seeds and the fleshy fruits of grape and paw paw could have been intentionally harvested during the autumn of the year together with the local nut crop. The sample is just too small to permit a firm conclusion regarding their possible use by the site's inhabitants. The aforementioned plant residues are summarized by feature and sample in Tables 1 and 2.

With respect to the single sample from Middle Woodland Crab Orchard context, very little can be said. It is perhaps noteworthy that the only residues observed were nuts, but 21 nutshell fragments aggregating a mere 0.94 g by weight does not make a strong case for the importance of nut exploitation by Crab Orchard people frequenting the study area. Be that as it may, the abundance of residues found in 10 l of feature fill in this instance does compare quite favorably with the quantities of nutshell observed elsewhere on this and the other site under investigation.

Finally, when one compares the Late Woodland data derived from these sites with those from a series of Late Woodland (and other)

Table 1: Late Woodland Plant Remains from Site 21C4-34, Perry County, Illinois.

Lot no.	ARG no.	Provenience	Sample Volume	Contents wt(g)/ ct		Comments
1	52	Feature 18	10 l	0.12	5	*Carya* spp. nutshell
2	54	Feature 28 (Level A)	10 l	0.01	1	knotweed seed, *Polygonum* sp.
				0.01	1	unidentified seed
3	55	Feature 28 (S 1/2, base of pit)	10 l	0.55	4	*Carya tomentosa*, mockernut hickory
				1.32	69	*Carya* spp. nutshell
				0.01	4	seeds of *P. erectum*, erect knotweed
4	56	Feature 27 (S 1/2, Zone A)	10 l	1.30	10	*C. tomentosa*
				0.13	3	*Carya cordiformis*, bitternut hickory
				3.80	144	*Carya* spp. nutshell
				0.60	1	seed of *Asimina triloba*, paw paw
				0.01	2	distorted seed of wild grape (probably *Vitis raparia*)
5	64	Feature 32 (S 1/2)	10 l	0.31	6	*Carya* spp. nutshell

Table 1, cont.

Lot no.	ARG no.	Provenience	Sample Volume	Contents wt(g)/ ct		Comments
6	66	Feature 36 (S 1/2)	10 l	0.97	40	*Carya* spp. nutshell
				0.03	1	*Juglans* sp. nutshell
				0.01	1	fragmentary seed of goosefoot, *Chenopodium* sp.

Table 2: Middle (*) and Late Woodland Plant Remains from Site 21C4-35, Perry County, Illinois.

Lot no.	ARG no.	Provenience	Sample Volume	Contents wt(g)/ ct		Comments
1	50	Feature 45 *	10 l	0.68	20	*Carya* spp. nutshell
				0.26	1	*Juglans* sp. nutshell
2	69	Feature 48	10 l	0.30	6	*Carya* spp.
3	74	Feature 48 (dark area, W 1/2)	20 l	0.15	1	*Carya ovata*, shagbark hickory
				0.76	1	wood charcoal of the American beech, *Fagus grandifolia*
4	77	Feature 48 (Zone 0)	10 l	0.36	16	*Carya* spp. nutshell (1 uncarbonized seed coat fragment)
5	86	Feature 55 (Zone 2, W 1/2)	10 l	0.10	3	*Carya* spp. nutshell
				0.29	2	*Juglans* spp. nutshell

components strung out along Galum Creek upstream from Big Woods and Lightfoot (Cremin 1983) and the impressive Late Woodland village called Jamestown overlooking the confluence of Galum, Bonnie, and Rock Fork creeks a short distance to the north (Cremin 1985), with their overwhelming evidence for the importance of the local nut crop in the procurement strategies of Late Woodland populations occupying the Northfield research area, together with at least some supplementation provided by fleshy fruits and starchy seeds such as those species represented by remains in the assemblage under study, there is nothing in the plant residues from 21C4-34 and 21C4-35 that can be construed as being unanticipated. From the standpoint of plant food resource exploitation during the Late Woodland occupation of the study area, these two sites in no appreciable way exhibit deviation from the pattern that emerged during prior analyses of archaeobotanical data from the Northfield in Perry County, Illinois.

References Cited

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